

## PATENT COOPERATION TREATY

## PCT



## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 04PP082	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. <b>PCT/KR2004/001523</b>	International filing date( <i>day/month/year</i> ) <b>24 JUNE 2004 (24.06.2004)</b>	Priority date ( <i>day/month/year</i> ) 25 JUNE 2003 (25.06.2003)
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 A61K 31/05</b>		
Applicant  <b>HYUNDEOK BIO&amp;TECHNOLOGY CO., LTD. et al</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:           <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> </li> <li>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).</li> </ul>
4. This report contains indications relating to the following items: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>

Date of submission of the demand  <b>25 JANUARY 2005 (25.01.2005)</b>	Date of completion of this report  10 OCTOBER 2005 (10.10.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  KIM, Hee Jin  Telephone No. 82-42-481-5412 

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/001523

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☒ This report is based on translations from the original language into the following language English which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3 and 23.1(b))
    - ☒ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
  
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
  - ☒ the international application as originally filed/furnished
  
  - ☐ the description:
    - pages \_\_\_\_\_ as originally filed/furnished
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  
  - ☐ the claims:
    - pages \_\_\_\_\_ as originally filed/furnished
    - pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  
  - ☐ the drawings:
    - pages \_\_\_\_\_ as originally filed/furnished
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  
  - ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
  
3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, Nos. \_\_\_\_\_
  - ☐ the drawings, sheets \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
  
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, Nos. \_\_\_\_\_
  - ☐ the drawings, sheets \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/001523

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1-3	YES
	Claims		NO
Inventive step (IS)	Claims	1-3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-3	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

The following documents are referred to in this report:

D1 : Journal of Agricultural and Food Chemistry, 2002, 50(24), pp.7182-6

D2 : Journal of Biological Chemistry, 2002, 277(38), pp.34933-40

D3 : JP 2003-128571 A2(08 May 2003)

D4 : US 4544550 A (01 October 1985)

The present invention relates to a hypoglycemic composition containing polyphenol extracted from green tea and calcium.

D1 discloses that polyphenol in tea increases insulin activity and its predominant active ingredient is epigallocatechin gallate. D2 discloses that the regulation of hepatic glucose production is decreased by epigallocatechin gallate, the green tea flavonoid and suggests a potential role for epigallocatechin gallate as an antidiabetic agent. D3 describes the diabetic medicine and the health food having a hypoglycemic activity which contains green tea extract. In D4, a method for treatment of diabetes is disclosed, wherein blood sugar is lowered when an energizer composition containing proteins, carbohydrates, minerals(including calcium pantothenate and calcium), vitamins and thyroglobulin is administered to the patient.

## 1. Novelty

Although D1- D4 disclose hypoglycemic composition containing polyphenol or calcium, none of the prior art discloses the combination of polyphenol and calcium. Therefore, the present invention can be considered novel.

(Continued on Supplemental Box)

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

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**Supplemental Box**

**In case the space in any of the preceding boxes is not sufficient.**

Continuation of:

**2. Inventive Step**

Because D4 discloses a hypoglycemic composition containing calcium as one of 20 components or more, it is not obvious to a skilled person in the art to select calcium for a combination with polyphenol. Moreover, the present invention has an unexpected synergic effect by a combination of polyphenol and calcium. Therefore, an inventive step can be acknowledged for the present invention.

**3. Industrial applicability**

The present invention is considered to be industrially applicable.